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26479 7590 03/22/2010

STRAUB & POKOTYLO
788 Shrewsbury Avenue
TINTON FALLS, NJ 07724

EXAMINER	
KRISHNAN, VIVEK V	
ART UNIT	PAPER NUMBER
2445	

DATE MAILED: 03/22/2010

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/775,486	02/10/2004	Kireeti Kompella	JUNIPER-22-1 (JNP-0302)	1048

TITLE OF INVENTION: DETERMINING LIVENESS OF PROTOCOLS AND INTERFACES

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	$1510	$0	$0	$1510	06/22/2010

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.

B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

PTOL-85 (Rev. 08/07) Approved for use through 08/31/2010.

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Complete and send this form, together with applicable fee(s), to: Mail **Mail Stop ISSUE FEE**
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INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

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I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)

(Signature)

(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/775,486	02/10/2004	Kirceti Kompella	JUNIPER-22-1 (JNP-0302)	1048

TITLE OF INVENTION: DETERMINING LIVENESS OF PROTOCOLS AND INTERFACES

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	$1510	$0	$0	$1510	06/22/2010

EXAMINER	ART UNIT	CLASS-SUBCLASS
KRISHNAN, VIVEK V	2445	709-238000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.

☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

(1) the names of up to 3 registered patent attorneys or agents OR, alternatively,

(2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1 _____

2 _____

3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

☐ Issue Fee

☐ Publication Fee (No small entity discount permitted)

☐ Advance Order - # of Copies _____

4b. Payment of Fee(s): **(Please first reapply any previously paid issue fee shown above)**

☐ A check is enclosed.

☐ Payment by credit card. Form PTO-2038 is attached.

☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

5. **Change in Entity Status** (from status indicated above)

☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27.

☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature _____ Date _____

Typed or printed name _____ Registration No. _____

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

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KRISHNAN, VIVEK V	
ART UNIT	PAPER NUMBER
2445	

DATE MAILED: 03/22/2010

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 750 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 750 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (http://pair.uspto.gov).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

Notice of Allowability	Application No.	Applicant(s)	
	10/775,486	KOMPELLA, KIREETI	
	Examiner	Art Unit	
	Vivek Krishnan	2445	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *12/14/2009*.

2. ☒ The allowed claim(s) is/are *2-10,12-15,17,19-21,28-41,43,45-48 and 50-57*.

3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   a) ☐ All b) ☐ Some* c) ☐ None of the:
      1. ☐ Certified copies of the priority documents have been received.
      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
      3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
   (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____ .
7. ☒ Examiner's Amendment/Comment
8. ☐ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

/V. K./	/VIVEK SRIVASTAVA/
Examiner, Art Unit 2445	Supervisory Patent Examiner, Art Unit 2445

DETAILED ACTION

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with John Pokotylo (Reg. No. 36,242) and Len Linardakis on March 11, 2010.

Claim Status:

Independent claims 1, 22 and 27 have been canceled. Dependent claims 11, 16, 18, 23-26, 27, 42, 44 and 49 have also been canceled.

Dependent claims 2-10, 48, 50, 51, 54 and 56 have been amended to depend (either directly or indirectly) from independent method claim 19, as amended.

Dependent claims 28-36 have been amended to depend (either directly or indirectly) from independent apparatus claim 45, as amended.

The application has been amended as follows:

Claim 1 (canceled)

Claim 2 (currently amended): The method of claim [[1]] 19 further comprising:

[[d)]] - maintaining, using the first node, a first timer for tracking a send time interval, wherein the [[acts]] act of [[composing the aggregated message and]] sending the aggregated message are performed after expiration of the first timer; and

[[e)]] - restarting, using the first node, the first timer after the aggregated message is sent.

Claim 3 (previously presented): The method of claim 2 wherein the aggregated message further includes a dead time interval, and wherein the send time interval is less than the dead time interval.

Claim 4 (previously presented): The method of claim 2 wherein the aggregated message further includes a dead time interval, and wherein the send time interval is no more than one third of the dead time interval.

Claim 5 (original): The method of claim 2 wherein the send time interval is less than one second.

Claim 6 (original): The method of claim 2 wherein the send time interval is less than 100 msec.

Claim 7 (currently amended): The method of claim [[1]] 19 wherein the aggregated message further includes a dead time interval.

Claim 8 (currently amended): The method of claim [[~~1~~]] 19 wherein the act of sending the aggregated message includes providing the aggregated message in an Internet protocol packet.

Claim 9 (currently amended): The method of claim 8 wherein the act of sending the aggregated message [[~~towards the neighbor node~~]] includes setting a destination address in the Internet protocol packet to a multicast address associated with routers that support aggregated protocol liveness.

Claim 10 (currently amended): The method of claim [[~~1~~]] 19 wherein the [[~~neighbor~~]] second node has at least one routing protocol peering with at least one of the at least two routing protocols.

Claim 11 (canceled)

Claim 12 (currently amended): For use with a node, a method comprising:

a) receiving, using the node, an aggregated message including, [[~~i~~)]] for a first set of at least two different kinds of routing protocols of a neighbor node, at least two indicators, each indicator identifying a different one of the at least two different kinds of routing protocols and corresponding status information for each of the protocols of the first set of the at least two different kinds of routing protocols as data within the aggregated message[[~~, and~~

~~ii) a time interval~~]]; and

b) updating, using the node, neighbor node protocol status information using the aggregated message, wherein the act of updating neighbor node routing protocol status information includes

i) determining, using the node, whether the first set of at least two routing protocols is the same as a second set of at least two routing protocols included in an earlier message,

ii) if the first set of at least two routing protocols is determined to be the same as the second set of at least two routing protocols, then for each of the at least two routing protocols of both the first and second sets having a changed status, informing, using the node, a locally running instance of the routing protocol of the changed status of its peer routing protocol of the neighbor node, and

iii) if the first set of at least two routing protocols is determined to be different from the second set of at least two routing protocols, then

A) for any routing protocol in the first set but not in the second set, informing, using the node, a locally running instance of the routing protocol of the status indicated in the aggregated message of its peer routing protocol of the neighbor node, and

B) for any routing protocol in the second set but not in the first set, informing, using the node, a locally running instance of the routing protocol that the status of its peer routing protocol of the neighbor node is down.

Claim 13 (currently amended): The method of claim 12 wherein the aggregated message further includes a time interval and wherein the act of updating neighbor node protocol status information further includes

[[~~i)~~]] - setting, using the node, a first timer to the time interval and starting the first timer,

[[~~ii)~~]] - if the first timer expires, setting, using the node, the status of each of the protocols of the neighbor node to down, and

[[~~iii)~~]] - if a further message, sourced from the neighbor node, and including

A) for a [[~~second~~]] third set of at least two protocols, at least two indicators, each indicator identifying the at least two routing protocols and corresponding status information for each of the routing protocols of the [[~~second~~]] third set, and

B) a new time interval,

is received then, resetting, using the node, the first timer to the new time interval and restarting the first timer.

Claim 14 (original): The method of claim 13 wherein each of the time interval and the new time interval is less than one second.

Claim 15 (previously presented): The method of claim 12 wherein the status information includes a routing protocol state selected from a group of routing protocols states consisting of (A) protocol up, (B) protocol down, (C) protocol not reporting, and (D) protocol restarting.

Claim 16 (canceled)

Claim 17 (currently amended): The method of claim [[~~16~~]] 12 wherein each of the aggregated message and the [[~~further~~]] earlier message include an indication of a relative message age, and wherein the act of updating neighbor node routing protocol status information further includes,

[[~~iv) if the further message is received then, in addition to resetting the first timer to the new time interval and restarting the first timer, further~~]]

[[~~A)~~]] - determining, using the node, whether the [[~~further~~]] aggregated message is younger than the [[~~aggregated~~]] earlier message, and

[[~~B)~~]] - if it is determined that the [[~~further~~]] aggregated message is not younger than the [[~~aggregated~~]] earlier message, then discarding, using the node, the [[~~further~~]] aggregated message.

Claim 18 (canceled)

Claim 19 (currently amended): A method for monitoring liveness of multiple protocols, the method comprising:

a) determining, at a first node, status information for a first set of at least two different kinds of routing protocols;

b) sending, from the first node, an aggregated message including, for the first set of at least two different kinds of routing protocols, at least two indicators, each indicator identifying a different one of the at least two different kinds of routing protocols and the corresponding determined status information for the at least two different kinds of routing protocols as data within the aggregated message to a second node;

c) receiving, at the second node, the aggregated message; and

d) updating, by the second node, first node routing protocol status information using the aggregated message, wherein the act of updating first node routing protocol status information includes

i) determining, by the second node, whether the first set of at least two different kinds of routing protocols is the same as a second set of at least two different kinds of routing protocols included in an earlier message,

ii) if the first set of at least two different kinds of routing protocols is determined to be the same as the second set of at least two different kinds of routing protocols, then for each of the at least two different kinds of routing protocols of both the first and second sets having a changed status, informing, by the second node, a locally running instance of the routing protocol of the changed status of its peer routing protocol of the first node, and

iii) if the first set of at least two routing protocols is determined to be different from the second set of at least two routing protocols, then

A) for any routing protocol in the first set but not in the second set, informing, by the second node, a locally running instance of the routing protocol of the status indicated in the aggregated message of its peer routing protocol of the first node, and

B) for any routing protocol in the second set but not in the first set, informing, by the second node, a locally running instance of the routing protocol that the status of its peer routing protocol of the first node is down.

Claim 20 (currently amended): The method of claim 19 wherein the aggregated message further includes a first time interval, and wherein the act of updating [[~~neighbor~~]] first node routing protocol status information further includes

[[~~i~~)]] - setting a timer to the first time interval;

[[~~ii~~)]] - starting the timer;

[[~~iii~~)]] - determining whether or not a further message including routing protocol status information is received from the first node by the second node before the expiration of the timer; and

[[~~iv~~)]] - if it is determined that a further message including routing protocol status information is not received from the first node by the second node before the expiration of the timer, then informing peer routing protocols of the second node that the at least two routing protocols of the first node are down.

Claim 21 (previously presented): The method of claim 19 wherein the status information includes a routing protocol state selected from a group of protocols states including at least (A) protocol up, (B) protocol down, (C) protocol not reporting, and (D) protocol restarting.

Claims 22-27 (canceled)

Claim 28 (currently amended): The apparatus of claim [[~~27~~]] 45 wherein the method further includes

[[~~iv~~)]] - maintaining a first timer for tracking a send time interval, wherein the act of [[~~composing the aggregated message and~~]] sending the aggregated message compose and send the aggregated message after expiration of the first timer, and

[[~~v~~)]] - restarting the first timer after the aggregated message is sent.

Claim 29 (previously presented): The apparatus of claim 28 wherein the aggregated message further includes a dead time interval, and wherein the send time interval is less than the dead time interval.

Claim 30 (previously presented): The apparatus of claim 28 wherein the aggregated message further includes a dead time interval, and wherein the send time interval is no more than one third of the dead time interval.

Claim 31 (previously presented): The apparatus of claim 28 wherein the send time interval is less than one second.

Claim 32 (previously presented): The apparatus of claim 28 wherein the send time interval is less than 100 msec.

Claim 33 (currently amended): The apparatus of claim [[~~27~~]] 45 wherein the aggregated message further includes a dead time interval.

Claim 34 (currently amended): The apparatus of claim [[~~27~~]] 45 wherein the act of sending the aggregated message includes providing the aggregated message in an Internet protocol packet.

Claim 35 (previously presented): The apparatus of claim 34 wherein the act of sending the aggregated message includes setting a destination address in the Internet protocol packet to a multicast address associated with routers that support aggregated routing protocol liveness.

Claim 36 (currently amended): The apparatus of claim [[~~27~~]] 45 wherein the [[~~neighbor~~]] second node has at least one protocol peering with at least one of the at least two protocols.

Claim 37 (canceled)

Claim 38 (currently amended): [[~~For use with a node, apparatus~~]] An Apparatus comprising:

a) at least one processor;

b) at least one input device; and

c) at least one storage device storing processor-executable instructions which, when executed by one or more processors, perform a method including

i) receiving, using the at least one input, an aggregated message including, [[~~A)~~]] for a first set of at least two different kinds of routing protocols of a neighbor node, at least two indicators, each indicator identifying a different one of the at least two different kinds of routing protocols and corresponding status information for each of the protocols of the first set of the at least two different kinds of routing protocols as data within the aggregated message[[~~, and~~

[[~~B) a time interval~~]], and

ii) updating neighbor node protocol status information using the aggregated message, wherein the act of updating neighbor node routing protocol status information includes

A) determining, using the node, whether the first set of at least two routing protocols is the same as a second set of at least two routing protocols included in an earlier message,

B) if the first set of at least two routing protocols is determined to be the same as the second set of at least two routing protocols, then for each of the at least two routing protocols of both the first and second sets having a changed status, informing, using the node, a locally running instance of the routing protocol of the changed status of its peer routing protocol of the neighbor node, and

C) if the first set of at least two routing protocols is determined to be different from the second set of at least two routing protocols, then

1) for any routing protocol in the first set but not in the second set, informing, using the node, a locally running instance of the routing protocol of the status indicated in the aggregated message of its peer routing protocol of the neighbor node, and

2) for any routing protocol in the second set but not in the first set, informing, using the node, a locally running instance of the routing protocol that the status of its peer routing protocol of the neighbor node is down.

Claim 39 (currently amended): The apparatus of claim 38 wherein the aggregated message further includes a time interval and wherein the act of updating neighbor node protocol status information further includes

[[~~A~~]] - setting a first timer to the time interval and starting the first timer,

[[~~B~~]] - setting the status of each of the routing protocols of the neighbor node to down if the first timer expires, and

[[~~C~~]] - if a further message, sourced from the neighbor node, and including

1) for a [[~~second~~]] third set of at least two protocols, at least two indicators, each indicator identifying the at least two routing protocols and corresponding status information for each of the routing protocols of the [[~~second~~]] third set, and

2) a new time interval,

is received, resetting the first timer to the new time interval and restarting the first timer.

Claim 40 (previously presented): The apparatus of claim 39 wherein each of the time interval and the new time interval is less than one second.

Claim 41 (previously presented): The apparatus of claim 38 wherein the status information includes a routing protocol state selected from a group of protocols states consisting of (A) protocol up, (B) protocol down, (C) protocol not reporting, and (D) protocol restarting.

Claim 42 (canceled)

Claim 43 (currently amended): The apparatus of claim [[~~42~~]] 38 wherein each of the aggregated message and the [[~~further~~]] earlier message include an indication of a relative message age, and wherein the act of updating neighbor node routing protocol status information further includes,

[[~~D~~)]] - determining whether the [[~~further~~]] aggregated message is younger than the [[~~aggregated~~]] earlier message, and

[[~~E~~)]] - if it is determined that the [[~~further~~]] aggregated message is not younger than the [[~~aggregated~~]] earlier message, then discarding the [[~~further~~]] aggregated message.

Claim 44 (canceled)

Claim 45 (currently amended): A system comprising:

a) a first node adapted to

i) determine status information for a first set of at least two different kinds of routing protocols, and

ii) send an aggregated message including, for the first set of at least two different kinds of routing protocols, at least two indicators, each indicator identifying a different one of the at least two different kinds of routing protocols and the corresponding determined status information for the at least two different kinds of routing protocols as data within the aggregated message to a second node; and

b) the second node adapted to

i) receive the aggregated message; and

ii) update first node routing protocol status information using the aggregated message, wherein updating first node routing protocol status information includes

A) determining, by the second node, whether the first set of at least two different kinds of routing protocols is the same as a second set of at least two different kinds of routing protocols included in an earlier message,

B) if the first set of at least two different kinds of routing protocols is determined to be the same as the second set of at least two different kinds of routing protocols, then for each of the at least two different kinds of routing protocols of both the first and second sets having a changed status,

informing, by the second node, a locally running instance of the routing protocol of the changed status of its peer routing protocol of the first node, and

C) if the first set of at least two routing protocols is determined to be different from the second set of at least two routing protocols, then

1) for any routing protocol in the first set but not in the second set, informing, by the second node, a locally running instance of the routing protocol of the status indicated in the aggregated message of its peer routing protocol of the first node, and

2) for any routing protocol in the second set but not in the first set, informing, by the second node, a locally running instance of the routing protocol that the status of its peer routing protocol of the first node is down.

Claim 46 (currently amended): The system of claim 45 wherein the aggregated message further includes a first time interval, and wherein the act of updating the first node routing protocol status information further includes

[[~~A~~)]] - setting a timer to the first time interval;

[[~~B~~)]] - starting the timer;

[[~~C~~)]] - determining whether or not a further message including routing protocol status information is received from the first node by the second node before the expiration of the timer; and

[[~~D~~)]] - if it is determined that a further message including routing protocol status information is not received from the first node by the second node before the expiration of the timer, then informing peer routing protocols of the second node that the at least two routing protocols of the first node are down.

Claim 47 (previously presented): The system of claim 46 wherein the status information includes a routing protocol state selected from a group of protocols states including at least (A) protocol up, (B) protocol down, (C) protocol not reporting, and (D) protocol restarting.

Claim 48 (currently amended): The method of claim [[~~1~~]] 19 wherein the status information is local routing protocol status information.

Claim 49 (canceled)

Claim 50 (currently amended): The method of claim [[~~1~~]] 19 wherein the status information of at least one of the at least two different kinds of routing protocols included in the aggregated message includes a routing protocol state set to protocol not reporting.

Claim 51 (currently amended): The method of claim [[~~1~~]] 19 wherein the status information of at least one of the at least two different kinds of routing protocols included in the aggregated message includes a routing protocol state set to protocol restarting.

Claim 52 (previously presented): The method of claim 12 wherein the status information of at least one of the at least two different kinds of routing protocols included in the first set of at least two different kinds of routing protocols included within the aggregated message includes a routing protocol state set to protocol not reporting.

Claim 53 (previously presented): The method of claim 12 wherein the status information of at least one of the at least two different kinds of routing protocols included in the first set of at least two different kinds of routing protocols included within the aggregated message includes a routing protocol state set to protocol restarting.

Claim 54 (currently amended): The method of claim [[1]] 19 wherein a first one of the at least two indicators identifies a first kind of routing protocol from a group of routing protocols consisting of (A) Border Gateway Protocol (BGP), (B) Intermediate system to intermediate system (IS-IS), (C) Open Shortest Path First - Version 2 (OSPF v2), (D) Open Shortest Path First -Version 3 (OSPF v3), (E) Routing Information Protocol Version 1/Version 2 (RIP v1/v2), (F) Routing Information Protocol next generation (RIP-ng), (G) Protocol-Independent Multicast (PIM), (H) Distance Vector Multicast Routing Protocol (DVMRP), (I) Label Distribution Protocol (LDP), (J) Resource Reservation Protocol (RSVP) and (K) Link Management Protocol (LMP), and

wherein a second one of the at least two indicators identifies a second kind of routing protocol, which is different from the first kind of routing protocol identified, from a group of

routing protocols consisting of (A) Border Gateway Protocol (BGP), (B) Intermediate system to intermediate system (IS-IS), (C) Open Shortest Path First - Version 2 (OSPF v2), (D) Open Shortest Path First -Version 3 (OSPF v3), (E) Routing Information Protocol Version 1/Version 2 (RIP v1/v2), (F) Routing Information Protocol next generation (RIP-ng), (G) Protocol-Independent Multicast (PIM), (H) Distance Vector Multicast Routing Protocol (DVMRP), (I) Label Distribution Protocol (LDP), (J) Resource Reservation Protocol (RSVP) and (K) Link Management Protocol (LMP).

Claim 55 (previously presented): The method of claim 12 wherein a first one of the at least two indicators identifies a first kind of routing protocol from a group of routing protocols consisting of (A) Border Gateway Protocol (BGP), (B) Intermediate system to intermediate system (IS-IS), (C) Open Shortest Path First - Version 2 (OSPF v2), (D) Open Shortest Path First -Version 3 (OSPF v3), (E) Routing Information Protocol Version 1/Version 2 (RIP v1/v2), (F) Routing Information Protocol next generation (RIP-ng), (G) Protocol-Independent Multicast (PIM), (H) Distance Vector Multicast Routing Protocol (DVMRP), (I) Label Distribution Protocol (LDP), (J) Resource Reservation Protocol (RSVP) and (K) Link Management Protocol (LMP), and

wherein a second one of the at least two indicators identifies a second kind of routing protocol, which is different from the first kind of routing protocol identified, from a group of routing protocols consisting of (A) Border Gateway Protocol (BGP), (B) Intermediate system to intermediate system (IS-IS), (C) Open Shortest Path First - Version 2 (OSPF v2), (D) Open Shortest Path First -Version 3 (OSPF v3), (E) Routing Information Protocol Version 1/Version 2 (RIP v1/v2), (F) Routing Information Protocol next generation (RIP-ng), (G) Protocol-

Independent Multicast (PIM), (H) Distance Vector Multicast Routing Protocol (DVMRP), (I) Label Distribution Protocol (LDP), (J) Resource Reservation Protocol (RSVP) and (K) Link Management Protocol (LMP).

Claim 56 (currently amended): The method of claim [[1]] 19 wherein the at least two different kinds of routing protocols for which the status information has been accepted have been established prior to accepting the status information from the at least two different kinds of routing protocols.

Claim 57 (previously presented): The method of claim 12 wherein the at least two different kinds of routing protocols for which the corresponding status information has been received in the aggregated message have been established prior to receiving the aggregated message.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vivek Krishnan whose telephone number is (571) 270-5009. The examiner can normally be reached on Monday through Friday from 9:00 AM to 5:30 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivek Srivastava can be reached on (571) 272-7304. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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